The gill of Perna viridis as a major route entry for Pb : a laboratory study.

Abstract

The distribution and levels of Cd, Pb and Zn were determined in the gill and remaining soft tissues of Perna viridis under laboratory conditions based on sublethal concentrations of metals (Cd: 1.210 mg/L; Pb: 1.645 mg/L; Zn: 2.950 mg/L) for four days exposure, followed by four days elimination. The results showed that the concentrations of Pb were higher in the gill than those in the remaining soft tissues during exposure and elimination periods while Zn levels were only higher during exposure period. However, Cd levels were lower in the gills than in the remaining soft tissues during exposure and elimination periods These laboratory results indicated that gills are the major entry route for the Pb, and to a lesser extent for Zn but unlikely for Cd since the Cd in the gill was lower than in the remaining soft tissues. The present findings indicated that different routes of uptake for Cd, Pb and Zn in the different tissues of P. viridis regardless of the fact that gill having a large surface area with mucus sheets which could facilitated the metal uptake. Other organs than gill could be another route of uptake for Zn and Cd in P. viridis.

Keyword: Heavy metals; Route entry; Metal exposure and elimination; Mussels.